

COAL MINING

MARCH, 1951

"The Picture-Book of the Industry"

VOLUME 28, No. 3

Highway



This name means efficiency in stripping!

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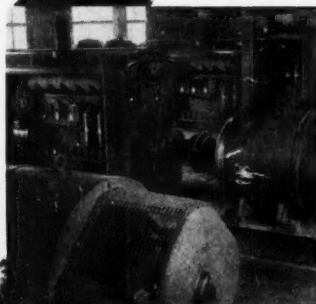
A-1722



Lima type 1201 high lift shovel, with 2½-yd. bucket, stripping for W. O. Gulbranson, Inc., Houtzdale.



Allis-Chalmers HD-19 (with Baker hydraulic bulldozer) backfilling spoil bank for W. G. Moore & Son, Houtzdale.



Partial view of four 100 KW, 250 volt d.c. generators driven by 150 h.p. 6-cylinder General Motors Diesel Engines at Stanley Coal Co., Krelm, Md.

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• Here's a Vertical McCarthy Unit on a Half-Track. Compact construction makes McCarthy Drills perfect for all mountings... truck, half-track, cat, jumbo or other special rigs.

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Powerful



• Compact machine built for the most difficult coal seam drilling. Machine has been tested and approved by the Bureau of Mines for recovery of coal.

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• If you haven't already seen a McCarthy at work, we suggest you see one quick!

These rugged, powerful units have gained universal acceptance as the most efficient machines ever made for drilling blast holes. Furnished with gasoline, electric or diesel power.

Extra heavy construction relieves you of maintenance troubles. They're versatile, fast, economical machines capable of 50% more productive service than any drill you might now be using!

Write Salem Tool today for full facts. Also ask about McCarthy Coal Recovery Drills—the machine that's being acclaimed in so many trade journals for its remarkable ability to reduce mining costs.

DRILLING EQUIPMENT SINCE 1901



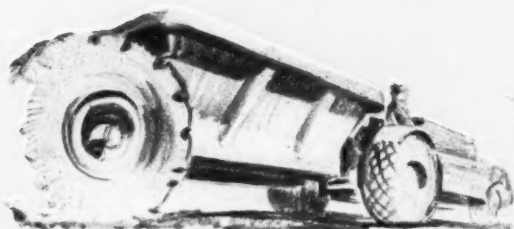
THE SALEM TOOL CO.

767 S. ELLSWORTH AVE. SALEM, OHIO, U.S.A.

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Diesel tractors and tractor tools, built by "Caterpillar" are the sure way of getting perfectly matched work-together earthmoving teams. These units, sold and serviced by Beckwith Machinery Company, provide the sure way of keeping in full and profitable operation.



This "Caterpillar" Diesel D 8, with its "Caterpillar" No. 80 Scraper, has proved an ideal team on stripping operations of this kind.

As evidence of "Caterpillar" satisfaction, take the Widnoon Company, successful coal strippers of Kittanning, Pa. Here is a "Caterpillar" Diesel D 8 of theirs and a No. 80 Scraper. They have owned from 4 to 8 of these outfits at one time, and always, according to their Mr. Kenneth Shaner, the result has

been complete satisfaction.

You need not be satisfied with less.

The operators who have used "Caterpillars" longest appreciate them most.



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BURDEN out of OVERBURDEN with "CATERPILLAR"

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You get rid of overburden fast, sure and economically with the power and stamina of "Caterpillar" equipment.

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You start on the job knowing it is going to keep going right through to a profitable and satisfactory finish. Few strippers will ask for more than that.

But your "Caterpillar" Diesel equipment does give more—much more: it goes on from one job to another, from one stripping location to another, with but a minimum of maintenance cost and care on your part.

And if and when you do need parts or maintenance, it is right at hand with Beckwith Machinery Company. As a "Caterpillar" user you profit by Beckwith service—you gain in satisfaction, in time, and in actual dollars.

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AND EXTRACTORS

J. Robert Bazley

boosts with



Big 12' 5" x 8' top opening speeds shovel swings, reduces spillage. Bazley's 4-yd. stripping shovel heaps 15 bank yards of sand and clay into Tournarocker body in 2½ to 5 minutes, depending on bank conditions.

Stripping 3,000,000 cubic yards of sand, clay and rock from anthracite coal deposits at Mt. Carmel, Pennsylvania, J. Robert Bazley, Inc. of Pottsville has been using 3 rear-dump C Tournarockers for nearly a year to haul from a 4-yard stripping shovel.

Complete 4200' cycle in 7.4 minutes

Tournarockers are loaded in an average of 3 to 4 passes from the well-heaped dipper . . . carry 15 bank yards per trip. Checked on a typical 4200' cycle, each 16-ton rig averaged a round trip every 7.4 minutes . . . including 3.6 min. to load, 0.3 min. to dump, and 3.5 min. for haul and return. Conventional dump trucks of smaller capacity, loaded by the same shovel and traveling over the same haul road, averaged 7.9 minutes for the same cycle.

In 5 months . . . only 7% downtime

In 2,000 hours of operation, the Tournarockers have maintained a 93% job efficiency record. "We're particularly impressed with the clean dump, the safety when the rear wheels are over the edge of the dump, and the extreme maneuverability of the units," says J. Robert Bazley, Company President.

In addition to these 3 LeTourneau rear-dumps, Bazley also is working 2 of the same C Tournapull prime movers with 16-ton Carryall Scrapers at the Mt. Carmel mine. These 186 h.p., electric-control prime movers are also interchangeable with flat-bed and bottom-dump haulers, as well as on scrapers, rear-dumps and other equipment.

Check the economy of these modern, 35 m.p.h., rubber-tired rigs for yourself before starting any major stripping operation. With these up-to-date LeTourneau units in your production fleet, you'll find that you can get lowest-net-cost-per-yard in any type of material, in any kind of weather, and on any sort of job. See your LeTourneau Distributor for complete facts and figures, or write TODAY.



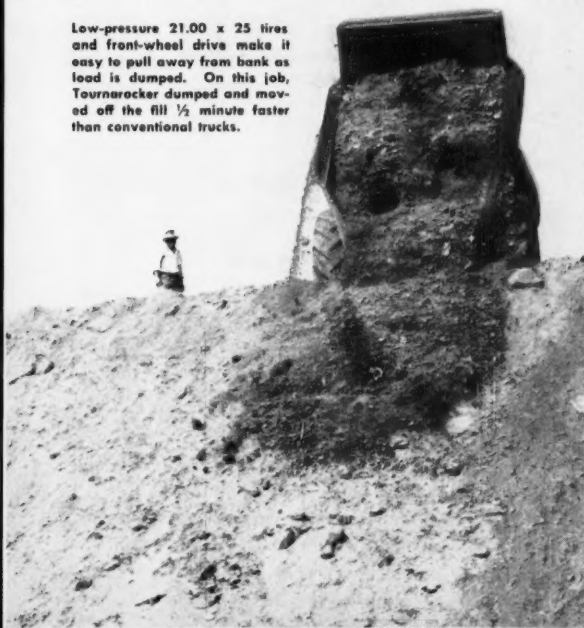
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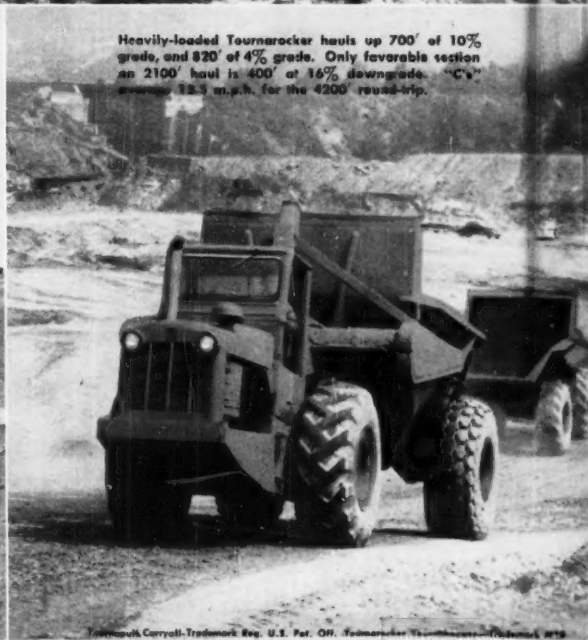
strip production *3" C" TOURNAROCKERS*



Low-pressure 21.00 x 25 tires and front-wheel drive make it easy to pull away from bank as load is dumped. On this job, Tournarocker dumped and moved off the fill 1/2 minute faster than conventional trucks.



Heavily-loaded Tournarocker hauls up 700' of 10% grade, and 820' of 4% grade. Only favorable section on 2100' haul is 400' of 16% downgrade. "Cv" averages 12.5 m.p.h. for the 4200' round-trip.



Tournaroller, Carryroll-Trademark Reg. U.S. Pat. Off. Tournarocker, Carryroll-Trademark, 1978

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COAL MINING

Vol XXVIII

MARCH, 1951

No. 3

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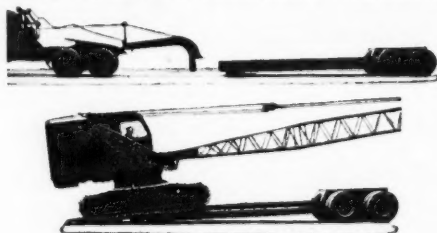
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BOWDIL PRODUCTS

HELP YOU GET MORE \$\$\$ FROM THAT MINE OF YOURS

NEW TELESCOPING TRANSIT SUPPORT

For use in all types deep mining, especially efficient for conveyor mining. As rigid as a prop, sturdily constructed of aluminum and stainless steel. Lightweight, easily, quickly sets up correct height for transit. Main column graduated on 2 sides in 1/100 foot.

Three standard lengths telescoping from 3 to 5 ft., 5 to 8 ft., and 8 to 12 ft. in height. Special lengths furnished on request.



BOWDIL BITS

Patented concave design increases bit clearance, assures longer wear without increased power consumption. Made from special steel, rolled, with concave faces. Tests in hundreds of mines have proven these Bits last 15% to 20% longer. Bowdil makes the right size and shape bit for every mining condition, to fit all types of chain.

BOWDIL CUTTER BAR

Bowdil Cutter Bars are designed for extra strength and power saving. Rivet-free body, Z bar construction, wide wearing strips make it the sturdiest bar in mining. Bowdil Bars are standardized to fit all coal mining machines.



FABRI-FORGE CHAIN

Lower your operating costs with Bowdil Fabri-Forged Chain. Rugged, easy to maintain, the drop-forged lug body stands up under heavy wear with breakage practically eliminated. A major improvement is the true-running radial track guide.



BOWDIL FAST ROPE SOCKET

You can save time with the Bowdil Rope Socket . . . takes just two minutes to install. No tools necessary. High tensile-strength steel and patented design give maximum strength.



REPLACEABLE POINT MINER'S PICK

With a Bowdil Miner's pick, it only takes a few seconds to replace a dull, blunted point with a sharp one. Light or heavy, Bowdil pick heads are perfectly designed for weight and balance, come with or without wood handle.

ALLOY STEEL AUGERS AND DRILL BITS

Uniform temper and shape eliminate almost all possibility of "grabbing." The use of special heat-treated alloy steels not only makes them last longer, but adds an important safety factor.



BOWDIL DRILL BITS

Any bit requirements can be met from Bowdil's complete line. Fish-tail auger bits, four-point auger bits and two-point clay bits are available in a number of different sizes . . . all made from Bowdil's specially treated steel for long and efficient service.



DETACHABLE JAW SPIKE PULLER

Small, easy to handle . . . pays for itself many times over. Detachable jaws make it possible to replace claws without delay. The special construction pulls spikes without bending them.



SPROCKETS FOR ALL MINING MACHINES

Bowdil Sprockets are made from special heat-treated alloy steel and designed for hard wear. Our stock of over 100 different styles includes clutch, spline and keyed types—various tooth designs of 4 to 13 teeth.

WANT SOMETHING SPECIAL? BOWDIL CAN BUILD IT

Bowdil has the staff and facilities to work with you on any custom building or rebuilding, engineering, machining, fabricating. Excellent heat-treat equipment. If you have a problem, bring it to Bowdil.

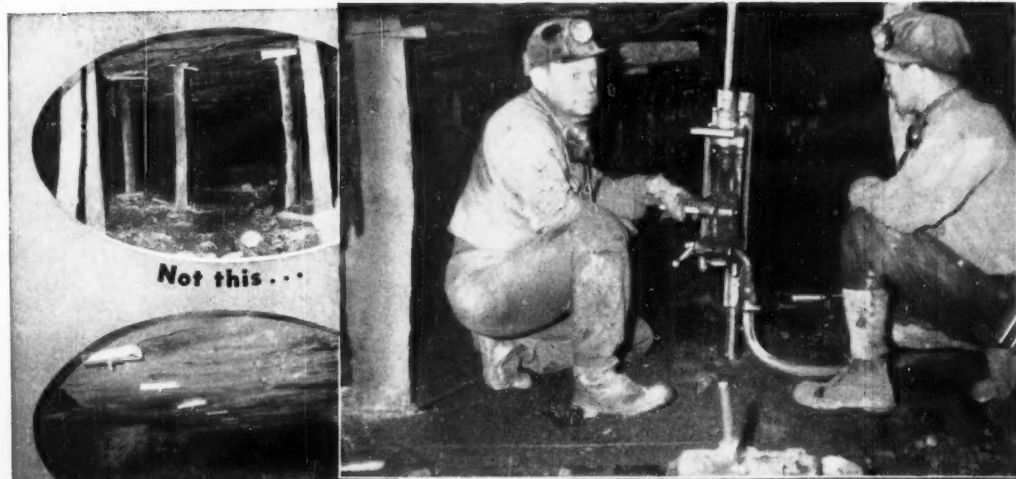


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DESIGNED AND BUILT BY BOWDIL

SALES AGENTS
FOR
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ELECTRIC
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BOWDIL
COAL CUTTING EQUIPMENT
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Helper, Utah—Kansas City, Missouri—Centerville, Iowa—Topeka, Kansas
New Castle, England—Alberta, Canada



Not this ...

... but THIS means increased production, greater safety

The start of a roof-bolting program
... soon the timbers will go

Roof Bolting

is Easier and Faster

with Le Roi-CLEVELAND "short-leg" Stoppers
... another famous Le Roi first.

IN mine after mine, roof bolting helps increase production — raises tons per man-shift.

As the trend toward this new practice grows, more and more Le Roi-CLEVELAND "short-leg" stoppers are going underground. For example, in one leading coal-mining area 91 out of 103 mines use Le Roi-CLEVELAND.

Here are a few reasons why these time- and money-saving machines can keep your roof-bolting cost down:

A complete range of sizes to meet every mining condition including low coal.

★ **Easy handling and fast drillers.**

☆ **Trip rotation** — this is standard on all Le Roi-CLEVELAND machines so that you can use the same stopper for drilling and, by stopping the rotation, for driving roof bolts.

★ **Built to stay underground** — that's why you can depend on Le Roi-CLEVELAND stoppers to save time and cut costs.

If you want more information on roof bolting just drop us a line. We pioneered and perfected not only the roof-bolting stopper, but also many of the techniques in use today.



LE ROI COMPANY

CLEVELAND ROCK DRILL DIVISION

12500 Berea Road, Cleveland 11, Ohio

Plants: Milwaukee; Cleveland and Greenwich, Ohio

RD-32

DO YOU KNOW?

Scientists studying a long-abandoned, almost forgotten coal mine here have come face to face with an intriguing question: Was northern New England once sub-tropical?

Fossilized plants and woody tissue preserved in the soft coal are of types found today only in southern U. S. latitudes, Dr. Elso S. Barghoorn of Harvard and Dr. William Spackman of Penn State report in the journal of the Society of Economic Geologists.

The Brandon deposit of lignite, a fuel that lies between peat and soft "brown coal" in its geologic development, has long been recognized as a geologic black sheep. It isn't where it ought to be. Discovered 102 years ago and actively mined only for a few decades, the pocket of soft, sooty fuel is "as out of place in Vermont as pigmies and palm trees," said Dr. H. A. Meyerhoff of the American Association for the Advancement of Science, who has also studied the geology of the Brandon area.

How the lignite was formed, why it was deposited in Brandon when very few other instances of Tertiary age low grade coal exist in the northeastern United States, are mysteries "for which there is at present no easy solution," Drs. Barghoorn and Spackman say.

Plants in the Brandon lignite are unusually well preserved. Most of them can be identified with certainty. Of 13 known types, nine grow today only in swamps of the Atlantic and Gulf Coastal plain from the Carolinas south.

"It is evident . . . that the climate which prevailed during the accumulation of the Brandon sediments was very different from that which now prevails in these latitudes," the scientists say.

A new chemical remedy which is reported to give "quite impressive results" in treating ringworm of the scalp in children, athlete's foot and other fungus infections of the skin, was announced at a meeting of the New York Academy of Sciences here.

The new drug is called "Asterol." It belongs to the class of chemicals called benzothiazoles. The general anti-fungus power of these chemicals led Dr. Norbert Steiger of the Hoffman-La Roche Company, Nutley, N. J., to put together the compound called Asterol for short. Chemically, it is 2-dimethylamino-6-b-diethylaminotoxo-benzothiazole.

Although possessing quite high anti-fungus activity, the new chemical has a low toxicity and is entirely without skin-irritating effect, tests have shown.

Results of use of Asterol for ringworm of the scalp in children and athlete's foot were reported by Dr. Frederick Reiss of New York University-Bellevue Medical Center, New York, and Dr. Conrad Stritler and associates of Queens General Hospital, Jamaica, N. Y.

Asterol will not be available for commercial sale until the early spring of 1951 because of the need for additional manufacturing facilities.

The team of Hoffman-La Roche which reported to the membership of the New York Academy of Sciences on the new ringworm and athlete's foot drug treatment consisted of Drs. E. Gunberg, S. Soohoo, E. Tisworth, D. Ressetor and R. J. Schnitzer. Dr. Gunberg described the laboratory studies leading to the discovery of Asterol.

Here and There in the Coal Industry

A New York firm has made arrangements to acquire a controlling interest in the Consolidated Coal Company, of St. Louis, and has, also, contracted to deliver the assets of the Consolidated Coal Company to Zeigler Coal and Coke Company of Chicago, Illinois, at a date to be announced.

A. M. Rogers, President of Zeigler Coal and Coke Company states "that the mine acquired from Consolidated Coal Co. will be operated by Bell and Zoller Coal and Mining Company, and that the coal will be sold by Bell and Zoller Coal Company, both of Chicago, Illinois."

* * * *



James D. Francis

James Draper Francis, of Huntington, W. Va., Chairman of the Boards of Island Creek Coal Co. and Pond Creek Pocahontas Co., who was the 1951 recipient of the Charles F. Rand Medal award Feb. 21 by the American Institute of Mining and Metallurgical Engineers during its annual meeting in St. Louis, Mo., for "distinguished achievement in mining administration."

* * * *

The Bluefield, West Virginia, district office of Mine Safety Appliances Company is now located at 1513 Bluefield Avenue in Bluefield. It was announced by Charles V. Miller, District Manager.

Area served by this district office includes Bluefield, Logan, Huntington, Mt. Hope, Charleston and Williamson, West Virginia, and Norton, Virginia.



Charley L. Bowman

Mr. Charley L. Bowman, President and Treasurer of the Bowdill Company, Canton, Ohio, manufacturer of the Bowdill two-point throw-away cutting machine bars, died at a Canton, Ohio, hospital, on January 30. He was confined to the hospital for several weeks before his death. Charley Bowman would have been 68 years old this coming August. Being the eldest of 14 children, Charley Bowman started work at the age of 15 in North Lawrence, Ohio, to help his father in the lumbermill business. From 1901 to 1915 Charley Bowman travelled all parts of the United States, Canada and Mexico as salesman of mining machinery. In 1918 Charley's father, Newton K. Bowman started work on the Bowdill two-point throw-away bit. In 1923 the Bowdill Company was formed with a capital of \$1,000,000.

* * * *

K. M. Quickel, manager of Bethlehem Collieries, died on December 4 after some months' sickness. Mr. Quickel, a graduate of Pennsylvania State College, worked in coal mines in Tennessee, Kentucky and West Virginia before affiliating with Bethlehem Collieries in 1916. He was appointed assistant to the manager in 1934 and manager in 1940.

Another Job where they're saving **TIME** and **MONEY**



...with **JOY** SULMET BITS

PLACE AND CONDITIONS—The seam varies from 4½' to 7' in thickness at this property. It is characterized by a hard slate band, 4" thick, approximately midway from floor to roof.

FORMER METHOD—Full seam mining was employed, the coal being undercut by a Joy 11-RU Universal Cutter. Excessive bit costs with their former bits made a shear cut impractical. The entire fall was loaded out and the slate picked out at the tippie.

PRESENT METHOD—The mine switched to Joy Sulmet SF Cutter Bits. The horizontal cut is now made in the slate band. A shear cut is made along the rib.

RESULTS—Hand-picking at the tippie has been eliminated, since the entire slate band is cut out and gobbled before the face is shot.

Powder costs are lower since a heavier charge was required to break the slate band.

Size consist has improved due to the lighter powder-charge required.

Cutting speed has increased, since bit-change time has been reduced considerably.

These cost improvements are entirely due to the ability of Joy Sulmet Cutter Bits to cut hard impurities more easily than ordinary bits can cut coal.

Consult a Joy Engineer

JOY MANUFACTURING COMPANY

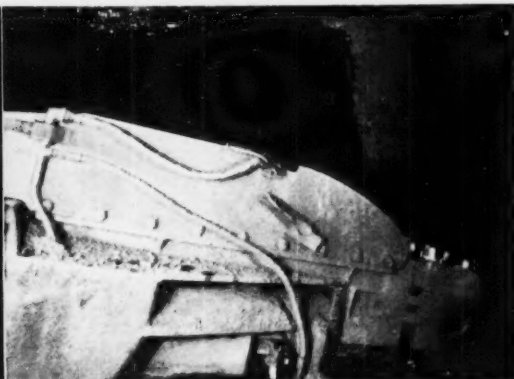
GENERAL OFFICES: HENRY W. OLIVER BUILDING • PITTSBURGH 22, PA.

IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, GALT, ONTARIO





Over-all view of the Joy Continuous Mining Machine.

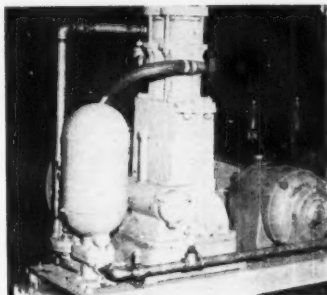


Cutting head of the Joy Continuous Mining Machine. Effective dust settling can be seen by the looks of this front end

Entry Driving With Joy Continuous Miner

One of the first to install a continuous mining machine was the Nemacon Mine of the Youngstown Sheet & Tube Company. The Pittsburgh seam of coal in which this mine operates runs about 7 feet in thickness, therefore the 4-J.C.M., the largest model of the Joy "miner" was installed. Like all other machinery that is radical departure from what has been used for many decades, this installation presented problems never before encountered. Patient effort by the manufacturer of the machine and by the operating department of the Nemacon mine improved the machine to make it the smoothest piece of operating equipment at the face. It is now producing the "lowest cost coal in the mine." Having only one continuous min-

er at the present time, it is being used to do the important job of entry driving.



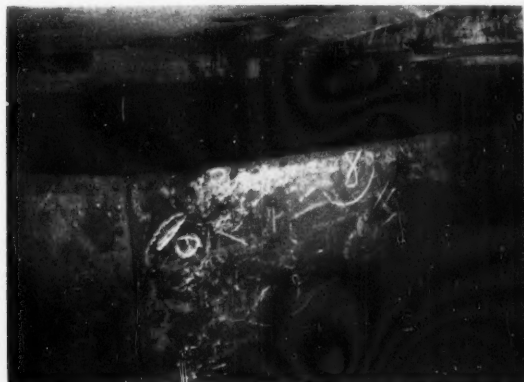
Pumping unit for sprays on the front end of the continuous mining machine. Compound "M" is used in spray water.

CAPACITY CHART FOG-TYPE NOZZLES (With 2-Hole Whirl Plate)

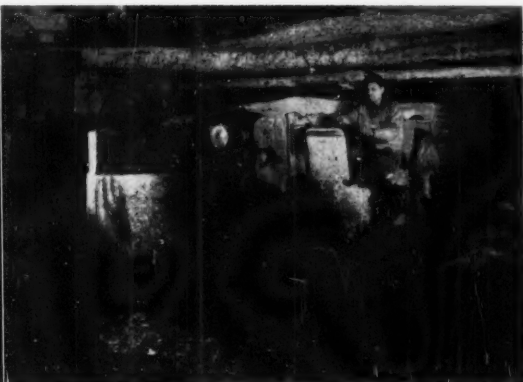
Hole No.	Hole No.	Capacity, G.P.M. at Pressure P.S.I.			
		300 lbs.	400 lbs.	500 lbs.	600 lbs.
2	.031	.34	.39	.42	.46
2 1/2	.039	.42	.48	.53	.58
3	.046	.53	.61	.68	.75
4	.062	.78	.88	.99	1.09
5	.078	1.03	1.17	1.30	1.42

At the Nemacon Mine, entries are driven 12 feet wide. Joy, model 10-SC shuttle cars having 8 tons capacity are used with the continuous miner. One of the shuttle cars is used to take the coal from the Miner while another is transporting it to mine cars in the entry.

(Continued on Page 20)



Large capacity all-steel mine cars are leveled to meet lowest roof in haulways. Level is made of wood and installed at the loading point.



The New Joy model 10-S shuttle car on way to mine car in entry.



A section of the 2300 foot long Main South belt line.

All Belt Transportation at the Woolridge Coal Company

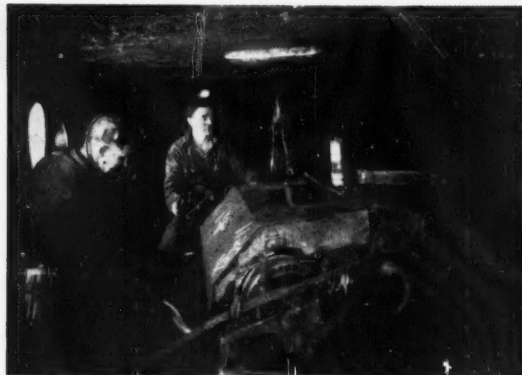
**THE BETTER WE PRODUCE,
THE BETTER WE LIVE.** A large part of our present labor leaders should adopt that slogan.

In the past 50 years our economy has been expanded three

times faster than our population has been increased. People in the United States are three times better off than they were in the year 1900.

Since 1900 real wages have in-

creased an average of $2\frac{1}{2}$ per cent per year. This has been done by steadily increasing the productivity of the worker. Increased productivity has worked
(Continued on Page 18)



One of the Jeffrey cutting machines in a 40 foot wide room.



Drilling the face in a 40 foot wide room.



Team from Mine No. 204 Consolidation Coal Co. (Ky.) won first place. Left to right, front row: Ottis Charles, Paline Sexton, captain, H. C. Blankenship, James Rutherford. Back row: Wm. Stapleton, Supt. Mine 204, Charles Dotson, Raymond Wetzel, Leroy Sexton, S. M. Cassidy, President.



Team from Consolidation Coal Co. (Ky.) Mine No. 214 won second place. Left to right, front row: Warnie Flint, captain, J. C. Dann, Supt. Mine 214. Back row: Covie Amburgy, Buster Brown, Elmer Bradley, Jack Bradley, Wilson Harrison.

First National First Aid Contest of the Mining Industry

The first national First Aid Contest of the mining industry was held at the Syria Mosque, Pittsburgh, Pennsylvania, last October 21. This contest was sponsored by Chief, Department of Mines from Kentucky, Ohio, Pennsylvania, West Virginia and the National Coal Association. Chief Judges were A. D. Sisk, Chief Department Mines, Kentucky, Stephen Williams, Chief Ohio Division Mines, Richard

(Continued on Pages 14 and 19)



Mr. R. L. Campbell, V. P., Charge of Operations, Eastern Gas & Fuel Association, presented the trophy.



A. D. Sisk, right, chief of the Kentucky Department of Mines & Minerals, accepting Mine Safety Appliances Company Trophy.



Team from Hanna Coal's Willow Grove Mine No. 10 Mine took third place. Front row, left: Melvin McCloud, captain, John Merryman and Frank Vigoffi. Standing, left: Mario Chini, Audrey Collins and Oscar Sykes.



Team from Dun Glen No. 11 Mine, Hanna Coal Co. took fifth place. Front row, left to right: Joe Vargo, Jr., Anthony Ippoliti, captain, and Edward Dolezal. Standing from left: Zach Chrisagis, George Horak and Joe Kasal.



State and National Officials at the meet. Left to right: The Honorable Richard Maize, Chief Dept. Mines Penna.; Arch Alexander, Chief Dept. Mines, W. Va.; J. J. Forbes, Chief Health and Safety, U. S. Bureau Mines; Earl R. Maize, Director Safety, National Coal Assn.



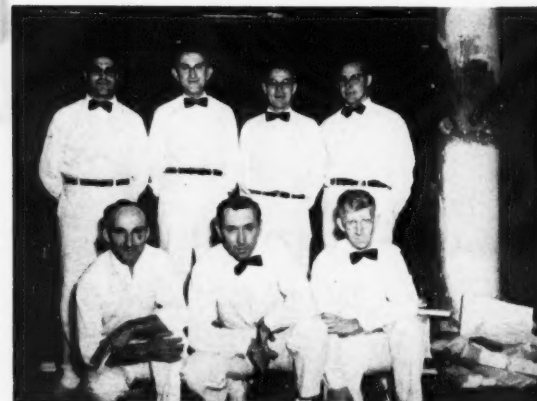
Left to right: Davis Reed, former president Kentucky Mining Institute; C. M. Honahue, Mine Safety Appliances Co.; Sam Cassidy, President Consolidation Coal Co. (Ky.); and John Ryan, Vice President, Mine Safety Appliances Co.



Team from the Springdale Mine, West Penn Power Co. Front row: Daniel Campbell, Samuel Dziuban, Sigmund Powloski. Back row: Wm. Simpson, Charles Dinsuir, Arthur Moore, Joseph Waitkus.



Team representing the Philadelphia Coal Iron and Railroad Co. This team won first honors in the Anthracite Safety Meet.



Jamison Coal & Coke team. Front row, left; George Kovar Rosman Horton, and Mocheal McCulloch. Standing; Anthony Schepis, Wm. Marchiney, Paul Guidish and F. M. Bland.



Powhatan Mining Co.'s team. Front row, left: P. Andes, E. Barton and J. Horvath. Back row, left: H. Horvath, captain. R. Alth and A. Weisman.



P. R. Paulick, Consulting Engineer, presenting his paper Mining Experiences in Japan and Nova Scotia.



F. P. Calhoun, Rochester & Pittsburgh Coal Co. presenting his paper The Effects of Continuous Mining on Coal Cleaning Plant Design.



C. E. Leshner, Retired President of the Disco Company, Pittsburgh, was one of the Co-Chairmen.

Fourth Annual Off-the-Record Meeting of the American Institute of Mining and Metallurgical Engineers

The Fourth Off-the-Record Meeting of the American Institute of Mining and Metallurgical Engineers was held in the William Penn Hotel, Pittsburgh Pennsylvania, November 3, 1950.

The morning session of this meeting took place in the Monongahela Room of the hotel, under the Co-Chairmanship of Stephen Krickovic, Chief Engineer, Eastern Gas & Fuel Associates and C. E. Leshner, President, Disco Company.

P. R. Paulick, Consulting Mining Engineer, gave a comprehensive and interesting talk about his mining experiences in Japan and in Nova Scotia in which he

emphasized the fact that most of the coal mines of the world follow the longwall system of mining. Mr. Paulick told of a shortened Joy continuous miner working longwall face with belt in a Nova Scotia mine.

Mr. E. P. Calhoun, Assistant Production Manager, Rochester and Pittsburgh Coal Company presented a paper on "The Effects of Continuous Mining on Coal Cleaning Plant Operation."

Mr. E. W. Hass, General Superintendent of Mines, Jones and Laughlin Steel Corporation and J. Griffin of the McNally-Pittsburgh Manufacturing Company headed discussions during the

morning session.

The afternoon session was under the Co-Chairmanship of Mr. George Trevorrow, Manager, Consumer Mining Company and H. F. Hebley, Research Consultant, Pittsburgh Consolidation Coal Co. Mr. H. B. Wickey, Vice-President and General Manager, Pennsylvania Coal and Coke Corporation presented a paper, "Operating Experiences with Continuous Miners in Thin Seams." Mr. L. S. Morgan, Division Engineer, Mine Waste Division, Department of Health, Pennsylvania presented a paper, "Pollution By and Control of Acid Mine Drainage in Pennsylvania."



H. B. Wickey, Vice-President and General Manager, Pennsylvania Coal & Coke Corp. presenting a paper Operating Experiences with Continuous Mining in Thin Seams.



W. E. Hess, general superintendent of mines, Jones & Laughlin Steel Corp., headed the discussions of the morning sessions.



George Trevorrow, manager, Consumers Mining Company, was Co-Chairman of the afternoon sessions.



Over-all view of the main entrance to the Greenbrier Hotel, White Sulphur Springs, West Virginia



George R. Higinbotham, Vice-President in charge of operations, Consolidation Coal Co., retiring President of the Institute



A. D. Sisk, Chief, Dept. of Mines & Minerals, Kentucky, was Chairman of the Friday afternoon session



E. E. Moore, Vice-President in Charge of Industrial Relations, Carnegie Illinois Steel Corp., presenting his paper "Safety, A Major Commodity in Industrial Relations."



Gerald von Stroh, Dir., Mining Development Committee, Bituminous Coal Research, Inc., presenting his film on production trials of the continuous mining machine developed by his committee.

W. Va. Coal Mining Institute— Central Appalachian Section of A.I.M.E. in Joint Meeting

West Virginia Coal Mining Institute held a joint meeting with the Central Appalachian Section of the A. I. M. E. at the Greenbrier Hotel, White Sulphur Springs, W. Va., on November 24, 25.

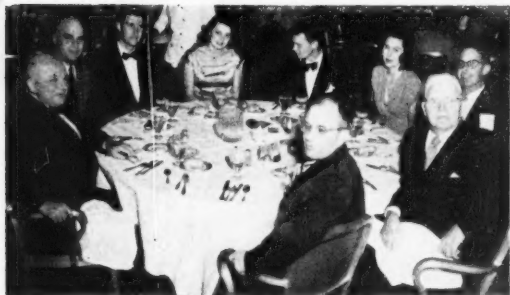
Business sessions opened at 9:30 A. M. on Nov. 24 under the chairmanship of Arch J. Alexander, Chief.



Chester Conrad, Assistant Maintenance Supt., Consolidation Coal Co., presenting his paper on Cable Splicing



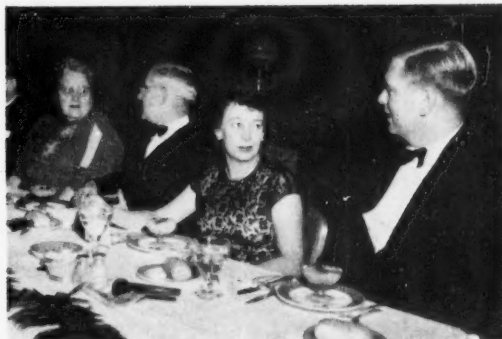
Robert Norcross, left, Asst. Secretary and G. R. Spindler, secretary-treasurer of the Association.



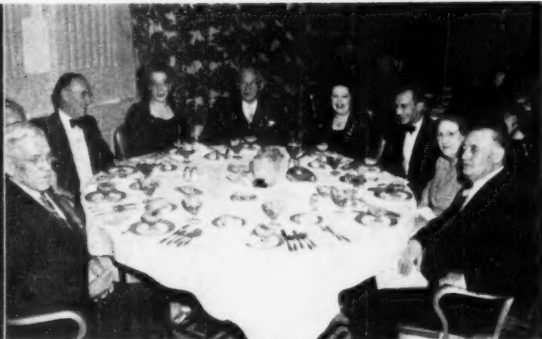
Left to right: W. J. German, Engineer, Pocahontas Fuel Co., Henry C. Carter, Representative, Mine Safety Appliances Co.; Herbert E. Jones and Mrs. Jones, Vice President, Amherst Coal & Associates; John B. Long and Mrs. Long, Long Super Mine Car Co.; Charles F. Smith, representative, Acme Limestone Co.; Robert M. Lambie and Charles Miller, both of the Mine Safety Appliances Co.



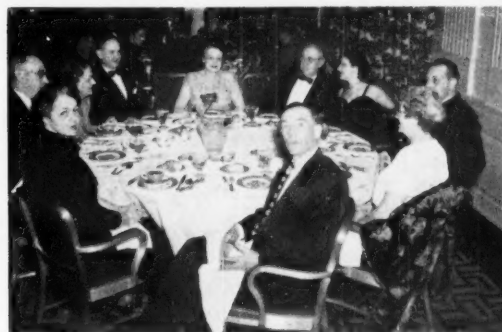
Left to right: C. L. and Mrs. Gladys Copley, Orval and Mrs. Eita Robson, Mrs. Mary and Jason McGuire, Mrs. Charlotte and William H. Lyttle, all of the Kennametal Co.



Left to right: Mrs. and Mr. Charles E. Lawall, Asst. to the President, C. & O. R. R.; Mrs. George McCaa and Mr. McCaa, General Superintendent, Consolidation Coal Co.



Left to right: J. B. Haskell, West Virginia Steel & Mfg. Co.; Jack Edwards, Associate Editor, Coal Age; Mrs. B. H. Mott, Carl Scholz, Mining Consultant, Charleston, W. Va.; Mr. B. H. Mott, Mott Core Drilling Co., and Mrs. Scholz.



Left to right: Mrs. James H. Herb, D. P. Morton, Chief Rate Commissioner, C. & O. R. R.; Mrs. Ira F. Davis; J. B. Herring, Asst. Engineer Coal Properties, C. & O. R. R.; Mrs. C. Ray Huffman, Ira F. Davis; Mrs. J. B. Herring; James H. Herb, E. P. Dandridge Co., Pittsburgh; Mrs. D. P. Morton; C. Ray Huffman, Monongahela Power Co., Fairmont, W. Va.



Left to right: Chester W. Brasher and Fred Colley of the Penn Machine Co.; A. D. Sisk, Island S. Becker; Minor Pace; Ralph Banks; P. O. Zimmerman of the Inland Steel Co.; S. D. Brady, Jr., of the B. & O. R. R.; Mr. Garvey of the Pocahontas Fuel Co. and W. V. Kincaid of the Gauley Mt. Coal Co.

Dept. Mines, W. Va., and A. D. Sisk, Chief, Ky. Dept. Mines. "Safety, A Major Commodity in Industrial Relations" by E. E. Moore, Vice Pres. in charge Industrial Relations, Carnegies Illinois Steel Corp. and his staff, approached the Safety and Accident Prevention problem from a different angle.

Mr. Gerald von Stroh, Director, Mining Development Committee, Bituminous Coal Research, Inc., showed movie film of the committee's trials of the continuous mining machine developed.

A dinner was given on the evening of the first day, presided over by Wm. A. Staab, Chairman, Central Appalachian Section, A. I. M. E., Morgantown. Toastmaster was George R. Higginbotham, President of the Institute. Guest Speaker was John J. Battle, Secretary, National Coal Association, Washington, D. C.

The technical sessions on the second day were under the chairmanship of R. H. Morris, Vice Pres. Ap-

plication of Stainless Steel Belts by A. R. Chichon, Jr., Johnstown Coal & Coke Co., and Cable Splicing, by Chester Conrad, Assistant Maintenance Supt., Consolidation Coal Co. Monongah, W. Va., were the papers discussed.

Mr. C. R. Bourland, Assistant Vice President, New River Company, was elected President of the West Virginia Coal Mining Institute for the ensuing year.

GOLFERS TOP THIS ONE

Needing a little diversion I arrived at the Greenbrier Hotel, White Sulphur Springs, W. Va., one day ahead of this meeting to play a game of golf. In the middle of the afternoon of November 23, I went to the golf club house. Being a bad day, no one could be found anywhere who wanted to play golf, so the caddy and I went out. I have never played that course before and after the third hole all the par 4 holes seemed to be about 1-inch short of par 5's. On the 10th tee, feeling like I was getting limbered-up,

I put all I had into a drive but smothered the shot. Becoming somewhat perturbed about this I asked the caddy for the 2-wood, saying I would hit the next (-: "%) shot hard enough to break that club! And hit it I did, not high but hard and straight for the green, about 200 yards away. Approaching that green we saw what looked like a ball on the green and my caddy assured me that that was the ball I hit. About 15 feet in front of that green we came upon another ball that had my name imprinted on it but it was not the ball I hit. Since there were no other persons within sight, ahead or behind us, the question was how did that other ball get there. The caddy and I could not figure it out, the golf pro and caddy master at the club house could not figure it out either. After prolonged deliberation I figured out the only way that ball could have got there. IT WAS ONE OF THOSE BALLS I HIT OUT OF SIGHT LAST SUMMER IN PITTSBURGH JUST LANDING AT WHITE SULPHUR SPRINGS ON NOVEMBER 23 ABOUT 275 MILES AWAY.

—Your Editor

ALL BELT TRANSPORTATION (Continued from Page 12)

as a two way lever pushing prices down and wages up. Today the American family is spending more money on consumers goods than ever before. The American family will double its spending power when the worker increases his output 100 per cent. How? By the better use of machinery, by the adoption of better methods of production and by the better use of labor.

The Woolridge Coal Company a Richwood, West Virginia is one of the better coal mining companies to produce better through the use of better machinery, better methods and better use of labor. The Woolridge Coal Company is operating in the Sewell seam of coal which runs from 6½ feet down to 27 inches in thickness. Roof in the mine changes from sandrock to slate and runs from good to bad. In bad roof area there is a 3 to 12 inch layer of cannel coal over the seam. In good roof area rooms are driven only 20 feet wide and are worked by 3 man crews.

All undercutting is done with Jeffrey 35 BB and 35 B machines. The 35 BB machines use 7½ foot cutter bars and the 35 B machines use 6 foot bars. Rooms are driven 300 feet deep and all coal is load-

ed by hand onto flight conveyors. The flight conveyors load onto entry conveyors which feed onto main conveyors that transport the output to a 200 ton surge bin at the mine mouth.

At the time the accompanying photographs were taken, belt conveyor line lengths ran as follows:

Main line	— 1500 feet
Main South	— 2300 "
3rd East	— 1800 "
4th East	— 700 "

All belt conveyors were 30 in. wide.

No track is used in this mine

so all men and supplies are transported on belts.

The mine is gaseous and men wear Edison cap lamps. The entire mine is well rock dusted.

A Mercury Arc Rectifier, located at the mine mouth keeps power uniform at the face.

The mine works 2 shifts, and 140 men, on both shifts average 1000 tons of coal each shift.

Coal in the surge bin is fed to the tippie where it is crushed to desired size by a Scottdale crusher. The output goes mostly to the domestic trade.



Entry belt line feeding onto the 2300 foot long belt.

An extra high heat resistant aluminum paint capable of withstanding temperatures up to 1700° F. is announced by Speco, Inc., Cleveland.

Known as HEAT-REM H-170, the new paint utilizes a silicon base and, according to the manufacturer, fuses with surface metal immediately upon application. It is reputed to form a bright, elastic finish resistant to moisture, corrosion, mild acids, alkalis and industrial fumes.

HEAT-REM H-170 is said to set in 4 hours and dry completely overnight on hot surfaces. It is recommended for use on heat lines, condensers, compressors, ovens, engine heads, mufflers, radiators, exhaust manifolds, etc. The manufacturer states that it makes possible the effective painting of many types of industrial equipment which have previously been regarded as "unpaintable" due to temperature limitations. H-170 is intended for use as a companion product to standard

HEAT-REM which is adapted to application in the temperature range of 1,000° to 1,500° F.

New HEAT-REM H-170 is packaged in quart, gallon and 5-gallon cans by Speco, Inc., 7308 Associate Ave., Cleveland 9, Ohio.



Publication of a new bulletin on the MARION Type 111-M machine has been announced by Marion Power Shovel Company of Marion, Ohio.

Bulletin No. 402, a two-color 12-page booklet, gives a complete design and performance story on the 111-M. This machine, equipped with diesel power, electric swing and MARION air control, is available for service as a shovel, dragline, clamshell, crane or long range shovel. The 11-M carries a 4 cubic yard dipper as a standard shovel and a 3½ cubic yard dipper as a long range shovel. Dragline bucket capacity varies from 3 to 5 cubic yards, depending on the length of the boom.

The MARION 111-M is designed for service in the construction, coal stripping, quarrying and mining industries.

Copies of Bulletin No. 402 can be secured from MARION sales representatives and distributors or from the company's general offices.



Representing Clover Splint Mine, Consolidation Coal Co. (Ky.). Front row, left to right: Granville Ratcliffe, Jesse Wilson, captain, Walter Gilliam. Back row, left: Bill Kelley, Aaron Witt, Argie Miller, Ernest McDaniel.



Team representing Puritan Coal Co., West Virginia. Left to right, front row: Walter Brumfield, captain, William Varney and Robert Vincent. Back row, left: Daniel Murphy, Winston Murphy, Robert Starr and Enoch Ferrell.

FIRST NATIONAL FIRST AID CONTEST

(Continued from Page 13)

Maize, Secretary Pennsylvania Department Mines, Arch J. Alexander, Chief, West Virginia Department Mines, and J. J. Forbes, Chief, U. S. Bureau Health and Accident prevention. Direction of the meet was under the supervision of Earl R. Maize, Director Safety, National Coal Association. Chief Supervising Judge was Harry Burdelsky, U. S. Bureau Mines, Pittsburgh. Record-

ers were D. J. Jones, Pennsylvania, Chief, John Hansord, West Virginia, J. H. Mosgrove, Kentucky, Dominic Stanchina, Ohio. Field Director was William Maher, Mine Safety Appliances Co.

First prize was a Loving Cup and individual safety discs, presented by the National Coal Association. Second prize was a Loving Cup presented by the Mine Safety Appliances Co. Third prize was a Loving Cup presented by the Mine Inspectors Institute of America.

The contest was made up of 15 teams representing the States of Kentucky, Ohio, Pennsylvania and West Virginia. Teams representing the Consolidation Coal Co. (Ky.) Mines Number 204 and 214 won first and second places. The Willow Grove Mine Number 10, Hanna Coal Co., Ohio, won third place.

It is planned to have another national contest next year and to invite teams from metal mines. The thought was that the next meet would be held in Chicago.

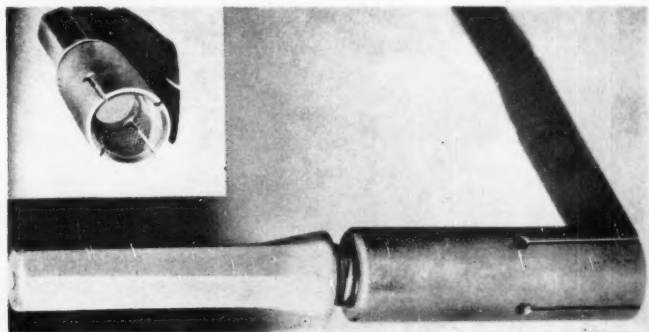
The Rock Bit Hole-Saver is used to reclaim lost bits and drill steel broken off in the hole so as to save redrilling the hole. Attached to threaded steel in place of a bit, its peculiar left hand, tapered threads cut in the metal of the broken rod and remove it quickly, easily and without jamming, according to the man-

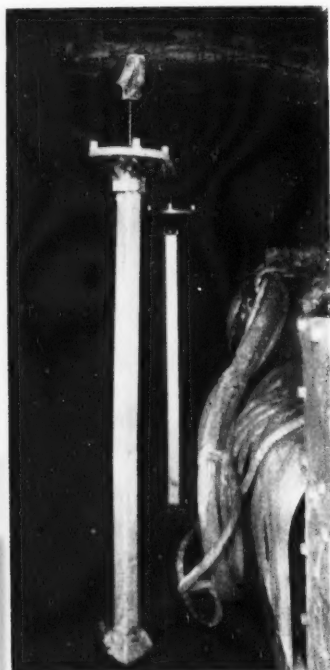
ufacturer. The tool is threaded for Timken H or D; Rock Bit R-1 or R-2 steel to fit the following size steels—(a) $\frac{7}{8}$ " Hex., $\frac{7}{8}$ " Q. O.; 1" Q. O.; $1\frac{1}{8}$ " Rd.; (b) $1\frac{1}{4}$ " Rd. and $1\frac{1}{8}$ " Rd. The manufacturer claims that the Hole-Saver has been field proven and rigorously tested. Rock Bit Sales and Service Co., 2514 East Cumberland St., Philadelphia 25, Pa.

Pittsburgh Consolidation Coal Company announced plans to build a demonstration-size coal pipeline system for the transportation of coal, which will be located near Cadiz, Ohio, at the site of the Georgetown surface mining operation of the Hanna Coal Company Division.

The new pilot project will consist of a 12 inch pipeline about 17,000 feet long, special coal crushing and "slurry" preparation equipment, and specially designed pumps which the company has developed for this purpose.

Preparation of the coal will include washing and crushing to fine sizes, then mixing with water to form a slurry. This slurry will be fed into the system and moved through the line under pressure by means of the special pumps. Equipment will be installed at the destination end of the pipeline system to remove the coal.



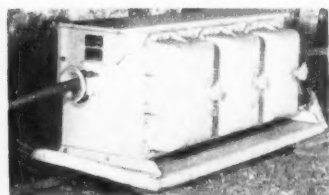


"Star" aluminum timber jacks are used at the face

ENTRY DRIVING

(Continued from Page 11)

The cutting end of the miner is fitted with the fog-type Bean industrial nozzle that gives maximum performance at the comparatively high solution pressures of 300 to 800 pounds per square inch. These nozzles function to a correspondingly lesser degree at pressures down to 100 psi, depending on the type of solution handled. An interchangeable feature permits easy exchange of discs and cores or "whirl plates", gives a range of sprays from a wide angle fog to long cutting stream or to a flat spray.



Joy Safety Circuit Center that protects cables and all electrical equipment used with the Continuous Miner. It contains automatic circuit breakers with ratings for each machine. If cable should short, a breaker in the box will kick out. Made in open or permissible types.

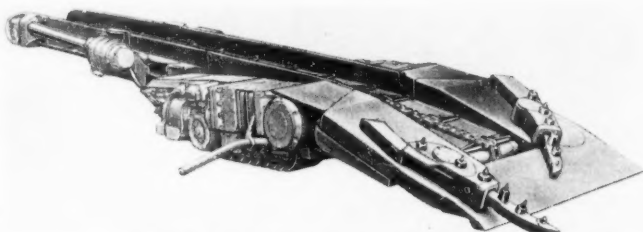
The Joy Manufacturing Company, Henry W. Oliver Building, Pittsburgh 22, Pa., announces a new line of high-capacity equipment for trackless mining in very low coal. The main pieces of machinery announced include the 20-BU-1 Loader, the 8-SC Shuttle Car, and the 12-RB Mobile Cutter. All three of these machines feature low overall height. The height of the 20-BU-1 is 24", while the 8-SC and 12-RB are 26" in height. An hydraulic roof-bolting drill with an overall height of 26" is also available.

The 8-SC Car has a water-level capacity of 80 cubic feet. The operator's platform is centrally located to provide equal visibility in either direction of travel. The new, tapered-end design is said to provide a minimum turning-clearance. Other features of the 8-SC are four-wheel airplane-type brakes, hydraulically-boosted steering, hydraulic adjustable-elevating discharge, an hydraulically-driven cable-reel, four-wheel drive and four-wheel steer.

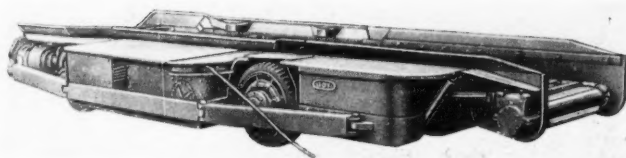
The Joy 12-RB is a rubber-tire mounted, mobile cutting machine



The Joy Low Coal 12 RB Trackless Cutter



The Joy 20 B.U.-1 Low Type Cat. Mounted Loader



The Joy 8-SC Low Coal Shuttle Car.

Despite its low height, the 20-BU-1 Loader is said to have a maximum capacity of 8 tons per minute. Gathering arms and conveyor are separately driven to permit continued loading in case of shuttle car delay. The conveyor can also continue to load into the shuttle car if the gathering arms should jam in the face. The machine is crawler-mounted and has a swinging conveyor to facilitate loading.

which can be supplied either as a bottom-cutter or a top-cutter. The cutter-bar may be swung 90° to either side for slabbing operations. A 50 H.P. motor is provided for the cutter-chain drive. The 12-R is both driven and steered hydraulically. Hydraulic bar-lift, and limited boom-roll provide compensation for the irregularities normal to mine roof or bottom.

Cleveland Brothers Equipment Company announce the appointment of Walter Deibert as Manager of their Frackville branch. Mr. Deibert was transferred from the Parts Department of Cleveland Brothers Wilkes-Barre Branch

to this new position. He was in the Navy for 3 years, is married, has one child, and hopes to make his home in the Frackville area.

The former Manager, Allen Houghwout, has reported for active duty with the armed services.

Old Mine Workings and Overflow of Creek Flood Strip Mine

At Avella, in the Southwest corner of Pennsylvania the Pittsburgh seam of coal is strippable along Cross Creek that traverses that territory. Practically all coal that lay under the deep cover there has been deep mined out shortly after World War One, and those old workings have filled with water.

A coal stripper for Avella, named Otis Johnson, has been recovering the coal left under and alongside Cross Creek and having a cover ranging from 12 to 35 feet. Last December Mr. Johnson's Model 1006 stripper cut too close to one of the old mine entries and pressure of water in that old entry broke out the barrier left by the stripper and flooded the pit, covered the stripper and a loading shovel above the engines in the two shovels.

To get rid of this water, one 10 inch electric, one 10 inch and one 6 inch gasoline driven pumps were installed and after several days of pumping the pit was dewatered of the deep mine water. This was not the end of Mr. Johnson's flood problems for just about the time he was set to resume operation again, warm weather set in that area, melting the heavy snowfall of the last Thanksgiving Holiday season, making Cross Creek overflow its banks and flooding the pit again. Thus Mr. Otis Johnson got a double blow of hard luck in several days. Luckily, however, Mr. Johnson was smart enough to carry insurance to cover events of this kind and his only loss was in the coal he did not produce during the flood periods.



Barber-Greene Co., of Aurora, Illinois, manufacturers of belt conveyors and other construction equipment have announced their newly developed Model 366 Portable Mine Conveyor.

Since the advent of the continuous mining machine, there has been a need for a light weight, yet durable portable conveyor which could be positioned manually to follow the progress of the machine. The 366 offers an ideal answer to this requirement.

The 366 Portable is furnished in 24 inch belt width and in 20 ft. length. It is mounted on two pneu-

matic tired wheels and is well balanced for "man-handling." Its overall height at the point of discharge is under 24 inches. Its weight is 1,600 lbs. The Conveyor is

furnished with a rugged, simple right angle drive which includes a permissible 3 HP electric motor, punction box and control.

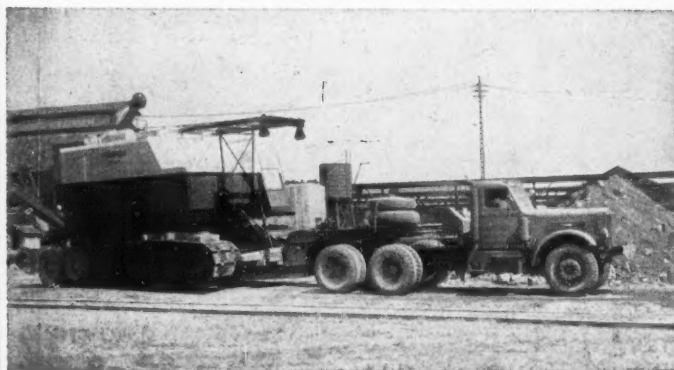
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Owners of lands leased or available for lease as coal producing properties will henceforth be represented by the National Council of Coal Lessors, Inc., the organization of which was announced recently.

One of the first objectives of the new organization is to seek amendment of that portion of the Internal Revenue Code that allegedly discriminates against coal land lessors. Under present law, income resulting from royalties paid to lessors is treated as ordinary income, and President Campbell of the new lessor's council offers this evidence as one of the reasons why the provision should be revised:

"Congress very properly recognized in 1943 that income realized from the sale of timber on a stumpage basis is a capital gain rather than ordinary income. Certainly the

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SPECO, Inc. 7308 Associate Ave.
Cleveland 9, Ohio

conventional lease arrangement whereby the land owner makes his coal available for production is an even stronger case for capital gains treatment. As a matter of fact, a coal land owner sells his coal to the persons who mine it. Moreover, the timber can be regrown in a matter of years, whereas the coal once mined is gone forever."

Charging that an "obvious tax inequity" runs against the coal land owner, Mr. Campbell explained that income realized from sale of coal lands outright is recognized as a capital gain, whereas when the coal is sold to a producer on a per-ton basis, the income is treated as ordinary income.

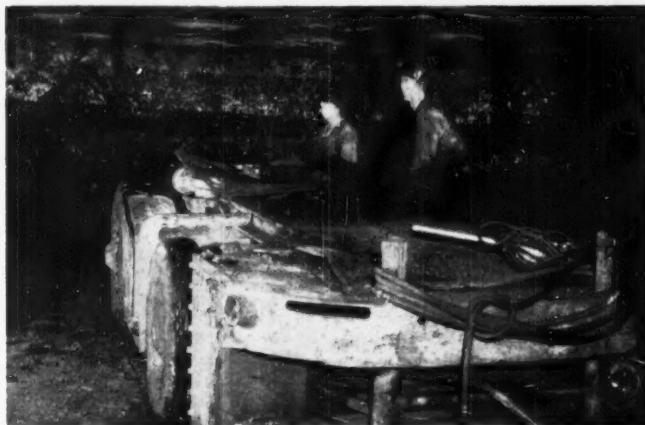
"If the land owner has timber on the surface and coal underneath the surface," Mr. Campbell continued, "he is permitted to treat his income from timber sold on a stumpage basis (that is, by the board feet cut) as a capital gain, but must consider income from the sale of his irreplaceable coal—sold by the ton mined—as ordinary income."

The council president said that Congress "will correct this inequity

if it is properly brought to the attention of senators and representatives."

Headquarters of the new associa-

tion, which invites communications from interested persons, is at 316 Southern Building, Washington 5, D. C.



Room for big machines to move is much needed in underground mines. The Tennessee Coal, Iron and Railroad Company mines use square steel shin plasters to pin the mine roof to solid rock top to give plenty leg and arm room to its miners by pioneering pinned-up roof in its iron and ore mines. This United States Steel subsidiary has greatly reduced accidents, improved working conditions and raised the quality of its mined products, used to make steel for the southern states.

SALEM "HERCULES" AUGERS FOR ELECTRIC DRILLS

Made To Withstand High Drilling Speed, Whip And Torsional Strain Of Electric Drills



Drills holes faster—Will not snap off shank or chip points—Outlasts four or five ordinary augers

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Complete line of Trolley Hangers, Clamps,
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Including Feeder Line Suspensions.

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Immediate Delivery from Stock

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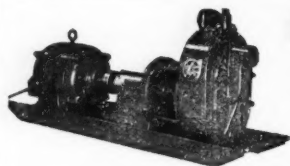
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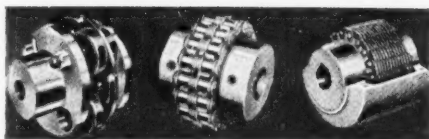
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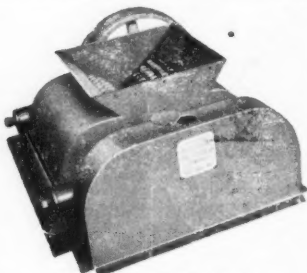


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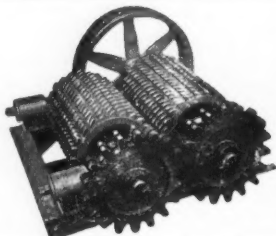
The Scottdale Crusher produces a consistent lump size throughout the crushing operation—great variations of size are eliminated.

The toothed double rolls being assembled in a staggered position set up an efficient shredding action that speeds up the job—saves time—and reduces operational costs.

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BOX 51

Dept. MC

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A new line of stainless steel hose clamps is announced by the Specialty Products Co., Cleveland.

Already in mass production, these new S. S. Hose Clamps are available in six sizes ranging from 1/2 inch to 2 inches. The clamping band is made of 26 gauge 1/4 hard stainless steel, while the "ears"



are made of 18 gauge stainless. According to the manufacturer, there is no possibility of corrosion since the complete unit, including the nut and bolt, is made of stainless steel. Specialty Products Company makes six standard stainless clamps to special requirements. Inquiries should be addressed to Fenton M. Davison, Specialty Products Company, 1965 East 66th St., Cleveland 2, Ohio.

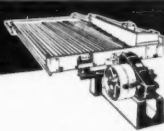
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51-B Bucyrus-Erie Hi-Lift Shovel, 45' boom, 34' stick, 2 yd. dipper; Buda-Lanova diesel engine.

54-B Bucyrus-Erie Combination Shovel & Dragline, 45' boom, 34' stick, 2 yd. dipper; and 80' boom, 2½ yd. bucket; Buda-Lanova diesel engine.

48-B Bucyrus-Erie Dragline, with 80' boom, Buda-Lanova diesel engine. Used very little. Good condition. Located in Hazleton.

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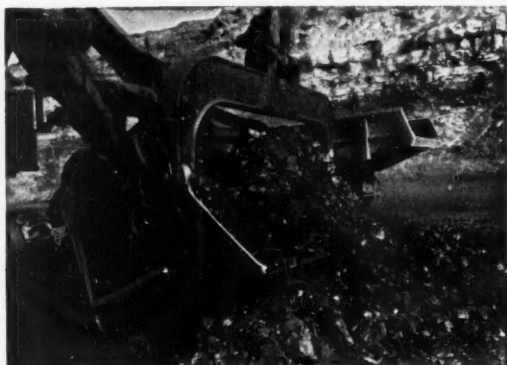
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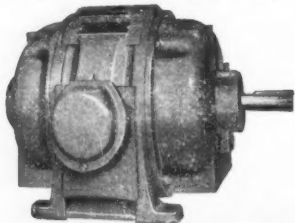
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1	100	Westinghouse	600
1	100	General Electric	1800
1	100	Reliance	580
1	100	Delco	1200
2	30	Westinghouse	680
4	75	Westinghouse	720
1	75	Westinghouse	1200
1	60	Westinghouse	1200
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1	125	Chal.	1150
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1	100	Allis-Chal.	1150
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1 3/4" Dia.	16c per lineal ft.
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2" Dia.	28c per lineal ft.
2 1/2" Dia.	32c per lineal ft.

Special diameters and lengths can be furnished. These Poles meet the requirements of the New Federal Mine Safety Code.

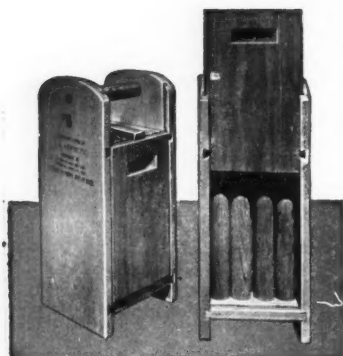


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These Poles are made of straight grained wood and are coupled together with removable wood pins held in place in recessed grooves by a rubber band and can be quickly connected and unconnected.

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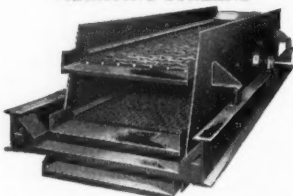
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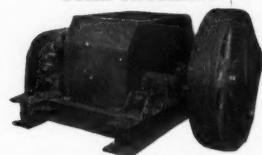
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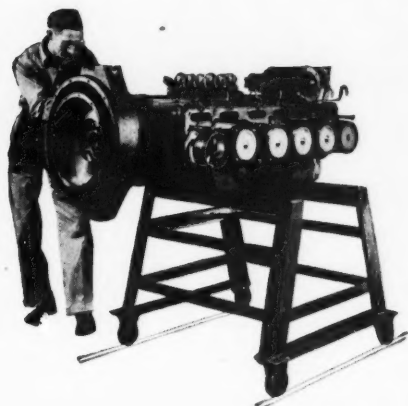


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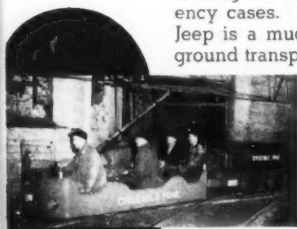
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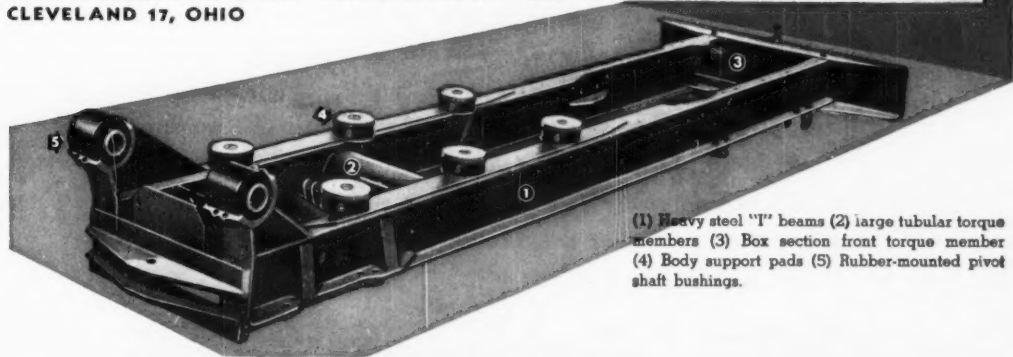
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Wilmot **CHROME- MANGANESE** Chain

Made of an alloy steel containing 12-15% manganese and 2% chrome, Chrome-Manganese chain is specifically designed for use where abrasion is especially severe.

Tests show that, under abrasive conditions, Wilmot Chrome-Manganese chain outlasts 2 to 3 standard chains of carbon steel. Work-hardening increases its Brinell from 220 to 450.

Standard Wilmot cast Chrome-Manganese steel chain, as listed below, is furnished with pins of heat-treated drop-forged steel. Pins may be obtained in cast Chrome-Manganese; also the important wear-

ing parts, sprockets, sprocket teeth, and traction wheels.

MADE FROM
CHROME-MANGANESE STEEL

Size	App. Pitch	Average Ultimate Strength	Weight Per Ft.
458	4"	48,000	3.5
468	4"	80,000	8.25
678	6"	85,000	6.75
698	6"	140,000	13.0
998	9"	140,000	10.5
9118	9"	230,000	17.0
9148	9"	325,000	28.0

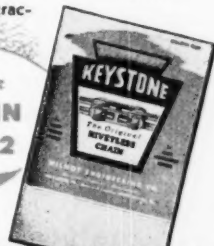
Everything for Your Conveyor

As the originators of Rivetless drop-forged steel chain, Wilmot

Wilmot Makes Largest Choice of Drop-Forged Chain & Attachments

stocks it in the largest choice of sizes available: 3" to 10 1/2" pitches; average ultimate strengths to 460,000 lbs. Largest choice of chain attachments; cast iron or steel flights, sprockets, traction wheels, take-ups, shafting, bearings, casings, trough; for coal, sludge or ash conveyors.

Send for
**BULLETIN
C-502**

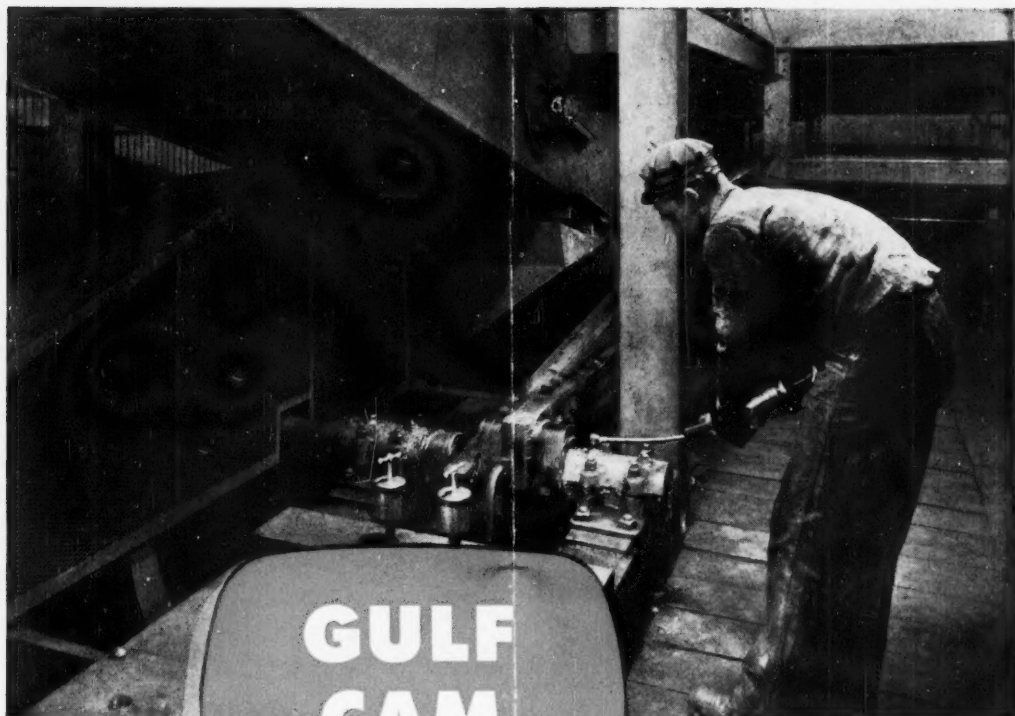


WILMOT ENGINEERING CO.

HAZLETON, PA.
Plant:
WHITE HAVEN, PA.

Wilmot Coal Preparation Equipment: Hydrotators • Hydrotator-Classifiers • Hydro-Separators • Simplex Jigs
Crushing Rolls • Sizing Shakers • Bucket Elevators • Conveyors • Car Hauls • Keystone Rivetless Chain, etc.

WILMOT BUILDS BETTER BREAKERS



GULF CAM GREASE

solves

costly coal mine lubrication problem

Because of constantly changing loads, high rubbing speeds, and the wet conditions under which shaker screen eccentric straps frequently operate, lubrication has often been difficult. Overheating, loss of lubricant, and excessive wear are typical of the problems encountered. To do the job a lubricant with special characteristics is called for. It must have the desirable characteristics of both grease and oil without the usual disadvantages of either.

Gulf Cam Grease, a recent development of Gulf Research, is the answer. It combines all the properties necessary to provide efficient lubrication for eccentric cams and bearings. It has a high dropping point—resists leakage from the bearings at high operating temperatures. And it doesn't separate or oxidize appreciably at these high temperatures.

Unlike most high temperature greases, Gulf Cam Grease has been specially treated so that it has excellent resistance to leaching by water. Its use helps eliminate lubrication troubles, and insures lower maintenance costs. Call in a Gulf Lubrication Engineer today. Gulf Oil Corporation • Gulf Refining Company, Gulf Building, Pittsburgh 30, Pennsylvania.

